

Page 9, line 10, "Roa" was changed to -Roa et al.--. The effected paragraph is presented below:

U.S. Patent Application No. 2003/0190486 to Roa et al, also discloses a hydrogen separator where a solid layer of hydrogen permeable material is deposited over a porous substrate of dissimilar material. In the Roa et al. application, a palladium alloy is deposited over the porous substrate of dissimilar material using a first electroplating process. Copper is then deposited on the palladium in a second electroplating process. The palladium and copper layers are then annealed to produce a palladium alloy in place on the substrate. However, the porous substrate only allows gas to contact the hydrogen permeable material where a pore gap is exposed to the hydrogen permeable material. This configuration greatly limits the area of hydrogen permeable material actually exposed to gas.

On Page 10, line 5, "Roa" was changed to -Roa et al.--. The effected paragraph is presented below:

In prior art systems such as the Ma patent and the Roa et al. application, where palladium alloy is deposited directly on a porous substrate, another problem is that the substrates have large pore sizes to maximize exposure of the palladium alloy to gas. This requires that thick uneven layers of palladium be deposited over the porous substrate to cover the pores of the substrate. This causes faults in the layer of palladium that tend to fail over time.

The Examiner has stated that on Page 16, line 1, "Ion" was to be changed to -- in --. The applicant could not find this typo in the applicant's version of the application. The Examiner has permission to make this change by Examiner's Amendment.

Page 46, line 12, the reference number "80" was deleted. The effected paragraph is presented below.

Referring to Fig. 12, a construction of a hydrogen separator ~~80~~ is shown that is not tubular in shape and using no powdered metallurgical techniques in its construction. In the embodiment of Fig. 12, a base substrate 82 is provided. The base substrate is made of material that is not permeable to hydrogen and can be either a metal alloy or a semiconductor. The base substrate 82, however, is made porous by chemically etching or laser etching. Bonding layers 83 are deposited on the base substrate 82. A first layer of hydrogen permeable material 84 is applied to the bonding layers 83 using tradition deposition techniques. The first layer of hydrogen permeable material 84 is then perforated by chemical etching or laser etching. The size of the perforations in the base substrate 82 and the size of the perforations in the first layer of hydrogen permeable material 84 are preferably made to be comparable to maintain a constant porosity throughout the two layers.

Page 47, line 17, "later" was changed to -- layer --. The effected paragraph is presented below.

A second layer of hydrogen permeable material 86 is then deposited over the first layer of hydrogen permeable material 84. The second layer of hydrogen permeable material 86 can be partially etched to increase the surface area exposed on its top. However, the etching of the second layer of hydrogen permeable material 86 is only partial and the second ~~later~~ layer of hydrogen permeable material 86 remains as a solid barrier over the first porous layer of hydrogen permeable material 84.